

U.S. Patent Application Serial No. 10/642,260
Response filed July 5, 2005
Reply to OA dated April 4, 2005

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 Claim 1 (currently amended): An operation microscope comprising:
2 an observation optical system including an objective lens opposed to an eye to be operated;
3 an illumination optical system for guiding illumination light from a light source to a vicinity
4 of an optical axis of the observation optical system; and
5 a deflection means for deflecting the illumination light guided to the vicinity of the optical
6 axis of the observation optical system by the illumination optical system and guiding the illumination
7 light to the eye to be operated through the objective lens,
8 wherein the deflection means includes a pair of deflection members which are a first
9 deflection member for guiding a first part of the illumination light at a predetermined oblique angle
10 with respect to the optical axis of the observation optical system and a second deflection member
11 for guiding a second part of the illumination light at an oblique angle substantially equal to the
12 predetermined oblique angle with respect to the optical axis simultaneously with guiding of the first
13 part of the illumination light by the first deflection member, the second deflection member being
14 disposed in an opposite side to the first deflection member so as to sandwich the optical axis of the

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15 observation optical system therebetween,
16 wherein the deflection means further includes a third deflection member that guides a third
17 part of the illumination light to the eye to be operated at an oblique angle larger than those for the
18 pair of deflection members with respect to the optical axis of the observation optical system,
19 the operation microscope further comprising:
20 an emitting region adjusting means for adjusting an emitting region of the illumination light
21 from the light source selected from one of the 1st, 2nd, and 3rd or plural deflection members by
22 switching one part of the illumination light so as to cope with the shape of the deflection members
23 to be guided to the eye to be operated.

1 Claim 2 (original): An operation microscope according to claim 1, wherein one deflection
2 member of the pair of deflection members is disposed between the illumination optical system and
3 the optical axis of the observation optical system and the other deflection member is disposed in an
4 opposite side to the one deflection member so as to sandwich the optical axis of the observation
5 optical system therebetween.

1 Claim 3 (currently amended): An operation microscope according to claim [[1 or]] 2,
2 wherein each of the pair of deflection members guides the part of the illumination light to the eye
3 to be operated at an oblique angle of 1.5 to 2.5 degrees, ~~preferably, 2 degrees~~ with respect to the
4 optical axis of the observation optical system.

1 Claim 4 (previously presented): An operation microscope according to claim 1 or 2, wherein
2 the deflection means further includes a third deflection member that guides a third part of the
3 illumination light to the eye to be operated at an oblique angle larger than those for the pair of
4 deflection members with respect to the optical axis of the observation optical system.

1 Claim 5 (currently amended): An operation microscope comprising:
2 an observation optical system including an objective lens opposed to an eye to be operated;
3 an illumination optical system for guiding illumination light from a light source to a vicinity
4 of an optical axis of the observation optical system; and
5 a deflection means for deflecting the illumination light guided to the vicinity of the optical
6 axis of the observation optical system by the illumination optical system and guiding the illumination
7 light to the eye to be operated through the objective lens,
8 wherein the deflection means includes a pair of deflection members which are a first
9 deflection member for guiding a first part of the illumination light at a predetermined oblique angle
10 with respect to the optical axis of the observation optical system and a second deflection member
11 for guiding a second part of the illumination light at an oblique angle substantially equal to the
12 predetermined oblique angle with respect to the optical axis simultaneously with guiding of the first
13 part of the illumination light by the first deflection member, the second deflection member being
14 disposed in an opposite side to the first deflection member so as to sandwich the optical axis of the

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15 observation optical system therebetween,

16 wherein the deflection means further includes a third deflection member that guides a third

17 part of the illumination light to the eye to be operated at an oblique angle larger than those for the

18 pair of deflection members with respect to the optical axis of the observation optical system. An

19 operation microscope according to claim 4,

20 the operation microscope further comprising:

21 an emitting region adjusting means for adjusting an emitting region of the illumination light

22 from the light source to switch ~~the deflection members each guiding the shield disk to guide~~ the part

23 of the illumination light to the eye to be operated,

24 wherein any one of the pair of deflection members, the third deflection member, or a

25 combination of one of the pair of deflection members and the third deflection member is selected

26 based on adjustment of the emitting region of the illumination light by the emitting region adjusting

27 means and the part of the illumination light is guided by the selected deflection member to the eye

28 to be operated.

1 Claim 6 (original): An operation microscope according to claim 5, wherein the emitting

2 region adjusting means comprises of a shielding disk having slots provided on its periphery to form

3 the emitting regions and shielding disk driving mechanism formed with a control circuit including

4 a stepping motor, a photo sensor and a foot switch.

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1 Claim 7 (previously presented): An operation microscope according to claim 4, wherein one
2 deflection member of the pair of deflection members and the third deflection member are integrally
3 formed.

1 Claim 8 (withdrawn): An operation microscope according to claim 1, wherein the
2 observation optical system includes a pair of optical systems composed of an optical system for
3 guiding observation light to a left eye of an operator and an optical system for guiding observation
4 light to a right eye thereof,

5 the operation microscope further comprising: an optical axis position changing means for
6 changing relative positions of optical axes of the right and left observation lights guided to the pair
7 of optical systems; and

8 a shifting means capable of retreating at least one of the pair of deflection members and
9 locating the optical axis position changing means on optical paths of the right and left observation
10 lights.

1 Claim 9 (withdrawn): An operation microscope according to claim 8, wherein the optical
2 axis position changing means is provided near one deflection member of the pair of deflection
3 members and at an opposite position thereto with respect to the optical axis of the observation optical
4 system, and

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5 wherein the one deflection member and the optical axis position changing means are
6 integrally shifted by the shifting means.

1 Claim 10 (withdrawn): An operation microscope according to claim 8 or 9, wherein the one
2 deflection member of the pair of deflection members is disposed between the illumination optical
3 system and the optical axes of the right and left observation lights, the other deflection member is
4 disposed in an opposite side to the one deflection member to sandwich the optical axes of the right
5 and left observation lights therebetween, and

6 wherein the shifting means retreats the other deflection member to one deflection member
7 side and shifts the optical axis position changing means so as to locate the optical axis position
8 changing means on the optical paths of the right and left observation lights.

1 Claim 11 (new): An operation microscope, comprising:
2 an observation optical system including an objective lens opposed to an eye to be operated;
3 an illumination optical system for guiding illumination light from a light source to a vicinity
4 of an optical axis of the observation optical system; and
5 a deflection means for deflecting the illumination light guided to the vicinity of the optical
6 axis of the observation optical system by the illumination optical system and guiding the illumination
7 light to the eye to be operated through the objective lens,
8 wherein the deflection means includes a pair of deflection members which are a first

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9 deflection member for guiding a first part of the illumination light at a predetermined oblique angle
10 with respect to the optical axis of the observation optical system and a second deflection member
11 for guiding a second part of the illumination light at an oblique angle substantially equal to the
12 predetermined oblique angle with respect to the optical axis simultaneously with guiding of the first
13 part of the illumination light by the first deflection member, the second deflection member being
14 disposed in an opposite side to the first deflection member so as to sandwich the optical axis of the
15 observation optical system therebetween,

16 wherein the deflection means further includes a third deflection member that guides a third
17 part of the illumination light to the eye to be operated at an oblique angle larger than those for the
18 pair of deflection members with respect to the optical axis of the observation optical system,

19 the operation microscope further comprising:

20 an emitting region adjusting means for adjusting an emitting region of the illumination light
21 from the light source to switch the deflection members so as to cope with the shape of the deflection
22 members each guiding the part of the illumination light to the eye to be operated,

23 wherein any one of the pair of deflection members, the third deflection member, or a
24 combination of one of the pair of deflection members and the third deflection member is selected
25 based on adjustment of the emitting region of the illumination light by the emitting region adjusting
26 means and the part of the illumination light is guided by the selected deflection member.

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1 Claim 12 (new): An operation microscope according to claim 11, wherein the emitting
2 region adjusting means comprises of a shielding disk having slots provided on its periphery to form
3 the emitting regions and shielding disk driving mechanism formed with a control circuit including
4 a stepping motor, a photo sensor and a foot switch.

1 Claim 13 (new): An operation microscope according to claim 3, wherein the predetermined
2 oblique angle is 2 degrees.

1 Claim 14 (new): An operation microscope, comprising:
2 an observation optical system including an objective lens opposed to an eye to be operated;
3 an illumination optical system for guiding illumination light from a light source to a vicinity
4 of an optical axis of the observation optical system; and
5 a deflection means for deflecting the illumination light guided to the vicinity of the optical
6 axis of the observation optical system by the illumination optical system and guiding the illumination
7 light to the eye to be operated through the objective lens,
8 wherein the deflection means includes a pair of deflection members which are a first
9 deflection member for guiding a first part of the illumination light at a predetermined oblique angle
10 with respect to the optical axis of the observation optical system and a second deflection member
11 for guiding a second part of the illumination light at an oblique angle substantially equal to the
12 predetermined oblique angle with respect to the optical axis simultaneously with guiding of the first

13 part of the illumination light by the first deflection member, the second deflection member being
14 disposed in an opposite side to the first deflection member so as to sandwich the optical axis of the
15 observation optical system therebetween,

16 wherein each of the pair of deflection members guides the part of the illumination light to
17 the eye to be operated at an oblique angle of 1.5 to 2.5 degrees with respect to the optical axis of the
18 observation optical system.

1 Claim 15 (new): An operation microscope, comprising:

2 an observation optical system including an objective lens opposed to an eye to be operated;

3 an illumination optical system for guiding illumination light from a light source to a vicinity
4 of an optical axis of the observation optical system; and

5 a deflection means for deflecting the illumination light guided to the vicinity of the optical
6 axis of the observation optical system by the illumination optical system and guiding the illumination
7 light to the eye to be operated through the objective lens,

8 wherein the deflection means includes a pair of deflection members which are a first
9 deflection member for guiding a first part of the illumination light at a predetermined oblique angle
10 with respect to the optical axis of the observation optical system and a second deflection member
11 for guiding a second part of the illumination light at an oblique angle substantially equal to the
12 predetermined oblique angle with respect to the optical axis simultaneously with guiding of the first
13 part of the illumination light by the first deflection member, the second deflection member being

14 disposed in an opposite side to the first deflection member so as to sandwich the optical axis of the
15 observation optical system therebetween,

16 wherein the deflection means further includes a third deflection member that guides a third
17 part of the illumination light to the eye to be operated at an oblique angle larger than those for the
18 pair of deflection members with respect to the optical axis of the observation optical system,

19 wherein one deflection member of the pair of deflection members and the third deflection
20 member are integrally formed.

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